



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
17.04.2002 Bulletin 2002/16

(51) Int Cl.7: **H04B 1/66**, H04S 1/00,
G11B 20/00, H04H 5/00,
H03M 7/30

(43) Date of publication A2:
18.11.1998 Bulletin 1998/47

(21) Application number: **98108554.1**

(22) Date of filing: **11.05.1998**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventors:
• **Shimoyoshi, Osamu**
Shinagawa-ku, Tokyo (JP)
• **Tsutsui, Kyoya**
Shinagawa-ku, Tokyo (JP)

(30) Priority: **13.05.1997 JP 12244997**

(74) Representative: **Melzer, Wolfgang, Dipl.-Ing. et al**
Patentanwälte
Mitscherlich & Partner,
Sonnenstrasse 33
80331 München (DE)

(71) Applicant: **SONY CORPORATION**
Tokyo (JP)

(54) **Audio signal encoding/decoding method and apparatus**

(57) An information recording apparatus which, while enabling reproduction by an old standard accommodating reproducing device, reduces the effect of the quantization error produced on decoding at the time of encoding and decoding which realizes a multiple channel system by new standard expansion. The apparatus includes an adaptive channel conversion circuit for multiplying signals of a L or R channel with a first coefficient,

multiplying signals of the other channel with a second coefficient, mixing signals of the channel multiplied with the first coefficient with signals of the channel multiplied with the second coefficient for each of the L and R channels, and for generating $(L+R)/2$ and $(L-R)/2$ from the L and R channels existing after the channel mixing. The apparatus also includes a first encoding circuit for encoding $(L+R)/2$ with A-codec and a second encoding circuit for encoding $(L-R)/2$ signal with B-codec.

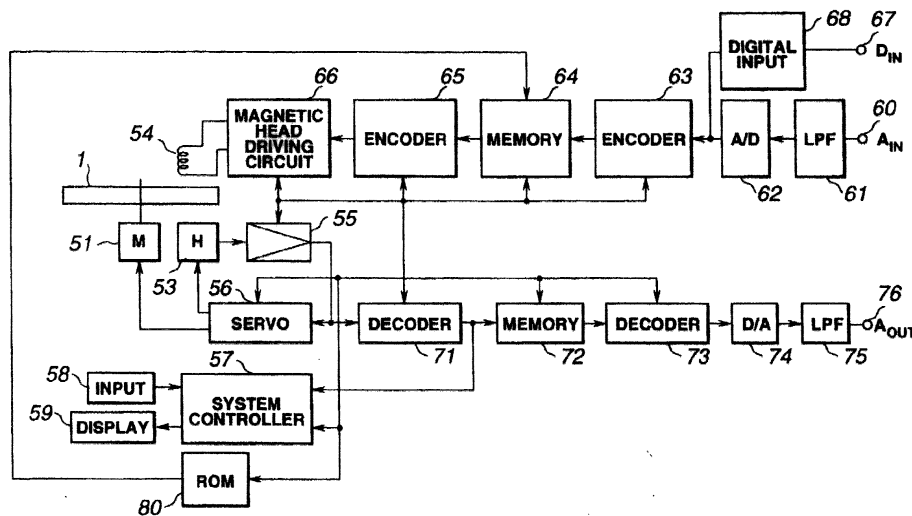


FIG.3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 10 8554

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	EP 0 597 649 A (SONY CORP) 18 May 1994 (1994-05-18) * the whole document *	1,2, 16-18,32	H04B1/66 H04S1/00 G11B20/00 H04H5/00 H03M7/30
A	PATENT ABSTRACTS OF JAPAN vol. 009, no. 126 (E-318), 31 May 1985 (1985-05-31) & JP 60 014539 A (NIPPON DENSHIN DENWA KOSHA), 25 January 1985 (1985-01-25) * abstract *	1,2, 16-18,32	
A	EP 0 563 832 A (MATSUSHITA ELECTRIC IND CO LTD) 6 October 1993 (1993-10-06) * the whole document *	1,2, 16-18,32	
A	EP 0 691 751 A (SONY CORP) 10 January 1996 (1996-01-10) * abstract * * page 9, line 13 - page 10, line 35 *	1,2, 16-18,32	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H04B H04S G11B H04H H03M
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 21 February 2002	Examiner Sucher, R
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (F04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 10 8554

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-02-2002

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0597649	A	18-05-1994	JP	6149292 A	27-05-1994
			EP	0597649 A2	18-05-1994
			US	5684923 A	04-11-1997

JP 60014539	A	25-01-1985	NONE		

EP 0563832	A	06-10-1993	JP	2693893 B2	24-12-1997
			JP	6291669 A	18-10-1994
			EP	0563832 A1	06-10-1993
			US	5636324 A	03-06-1997

EP 0691751	A	10-01-1996	JP	3175446 B2	11-06-2001
			JP	7154265 A	16-06-1995
			EP	0691751 A1	10-01-1996
			US	5717670 A	10-02-1998
			WO	9515032 A1	01-06-1995
